WORKSHOP MANUAL

F SERIES

GENERAL INFORMATION

SECTION 0

ISUZU

Isuzu Motors Limited

Service Marketing Department

NOTICE

Before using this Workshop Manual to assist you in performing vehicle service and maintenance operations, it is recommended that you carefully read and thoroughly understand the information contained in Section-0 under the headings "GENERAL REPAIR INSTRUCTIONS".

All material contained in this Manual is based on the latest product information available at the time of publication.
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Applicable Model:

F Series

This Manual is applicable to 2007 year model vehicles.

THIS MANUAL INCLUDES THE FOLLOWING SECTIONS:

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0B	MAINTENANCE AND LUBRICATION

GENERAL INFORMATION

GENERAL INFORMATION

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GENERAL INFORMATION

APPLICABLE MODEL

FRR	FSR	FTR	FVR

This manual is applicable to 2007 year model.

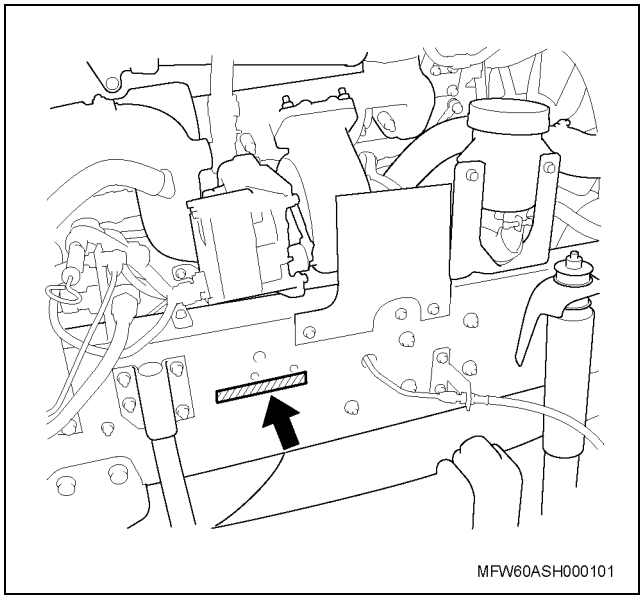
GENERAL REPAIR INSTRUCTIONS

1. Park the vehicle on level ground and chock the front or rear wheels before lifting the vehicle.
2. Use covers on the vehicle body, seats, and floor to prevent damage and/or contaminations.
3. Disconnect the grounding cable from the battery before performing service operations.
   This will prevent cable damage or burning due to shortcircuiting.
4. Raise the vehicle with a jack set against the axle or the frame.
5. Support the vehicle on chassis stands.
6. Handle brake fluid and antifreeze solution with great care.
   Spilling these liquids on painted surfaces will damage the paint.
7. The use of the proper tool(s) and special tool(s) where specified is essential to efficient, reliable, and safe service operations.
8. Always use genuine ISUZU replacement parts.
9. Discard used cotter pins, gasket, O-rings, oil seals, lock washers, and self-locking nuts at disassembly.
   Normal function of these parts cannot be guaranteed if they are reused.
10. Keep the disassembled parts neatly in groups.
    This will facilitate smooth and correct reassembly.
11. Keep fixing nuts and bolts separate.
    Fixing nuts and bolts vary in hardness and design according to installation positions.
12. Clean all parts before inspection or reassembly.
13. Clean the oil ports and other openings with compressed air to make certain that they are free of dirt and obstructions.
14. Lubricate the rotating and sliding faces of all moving parts with oil or grease before installation.
15. Use the recommended liquid gasket to prevent leakage.
16. Be sure to tighten nuts and bolts to the specified torque, using a properly maintained torque wrench.
17. When service operation is completed, make a final check to be sure service has been done properly and problem has been corrected.
18. When removing or replacing parts that require refrigerant to the discharged from the Air conditioning system, be sure to use the ACR4 or equivalent to recover and recycle Refrigerant-134a (HFC-134a), to promote the movement for the protection of the ozone layer covering the earth.
19. To assure safety, always slowly release air pressure from the air tanks before disconnecting pipes, hoses or other parts from any unit under pressure.
20. Prior to start the welding work, the following operations are required;
    - Disconnect all connectors of electronic control unit.
    - Disconnect battery ground terminal.
    - Welding machine ground cable must be connected near the welding point.
    - Turn off the all switches.

IDENTIFICATION

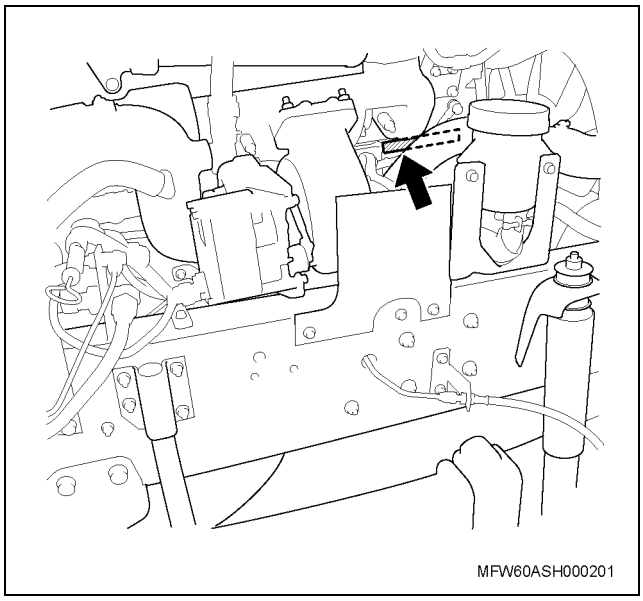
CHASSIS NUMBER:

The chassis number is stamped on the front right-hand side of the chassis side member.



ENGINE NUMBER:

The engine number is stamped on the front right hand side of the cylinder block.

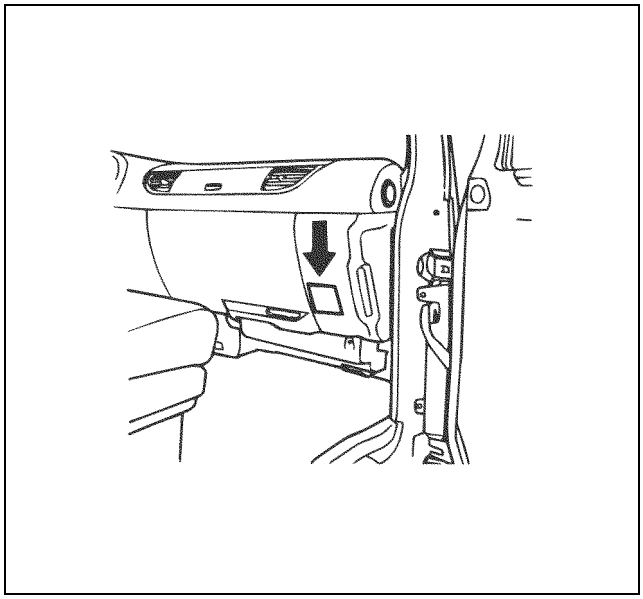


SERVICE PARTS ID PLATE

The vehicle identification plate is attached to the passenger side lower dashboard.
The vehicle identification plate has the following information:

- Vehicle identification number (VIN)
- Wheelbase dimensions
- Paint information
- Production options or special equipment installed on the vehicle at the factory.

Refer to the vehicle identification plate when ordering replacement parts.



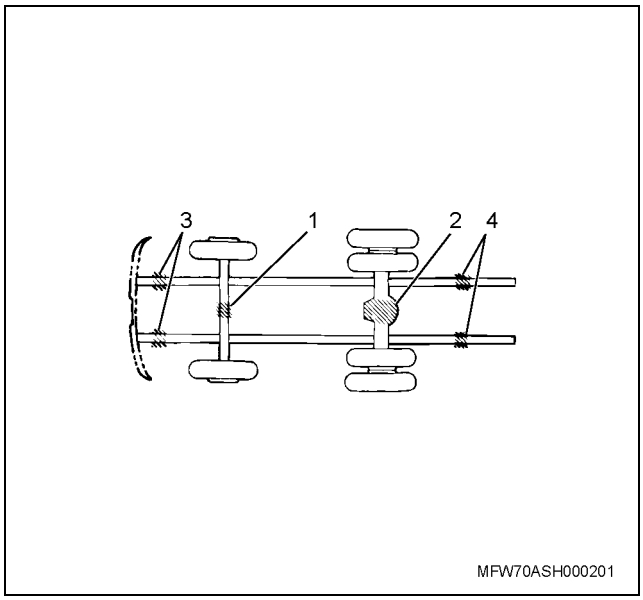
LIFTING INSTRUCTION

If it necessary to use a lifting device other than the original equipment jack, see ilustration for acceptable lifting points.
Lifting should only be done at the positions indicated to prevent possible damage to the vehicle.

CAUTION:
Failure to observe the acceptable lift points may result in unsatisfactory vehicle performance or a durability failure which may result in loss of control of the vehicle.

Garage Jack and Safety Stand

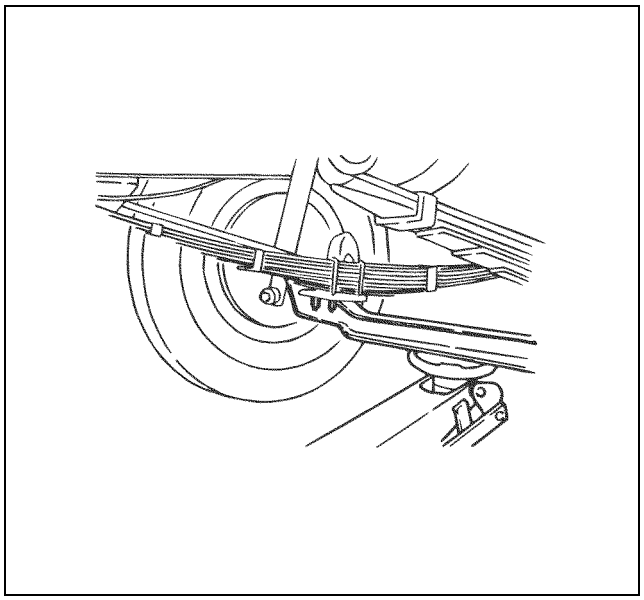
Lifting Point and Supportable Point Location



Legend
1. Front axle
2. Rear axle center
3. Side frame front side
4. Side frame rear side

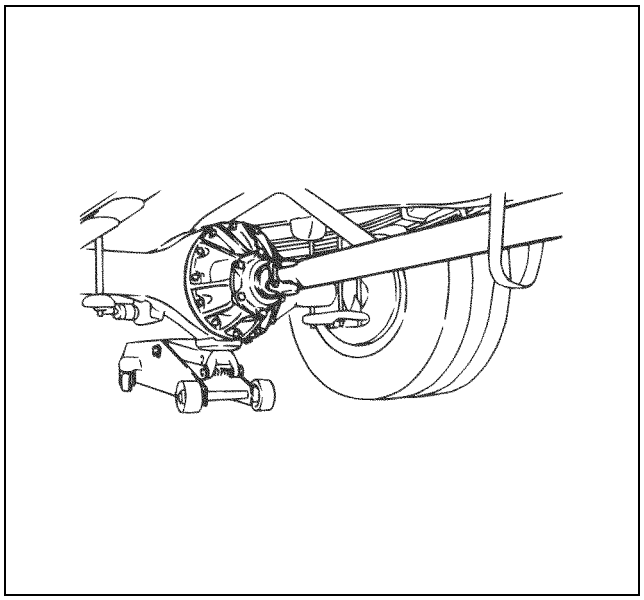
Lifting Point Positions

Front Axle



CAUTION:
Do not lift or support on engine oil pan.

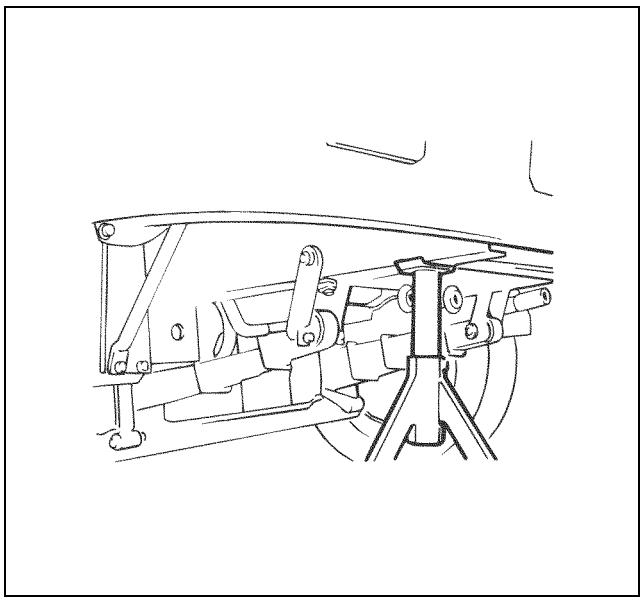
Rear Axle



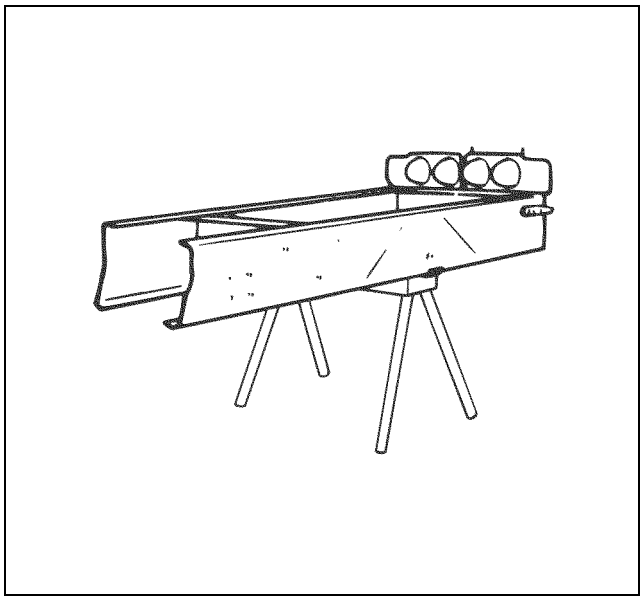
CAUTION:
Do not lift or support on rear axle tube.

Chassis Stand Position

Front Side Frame



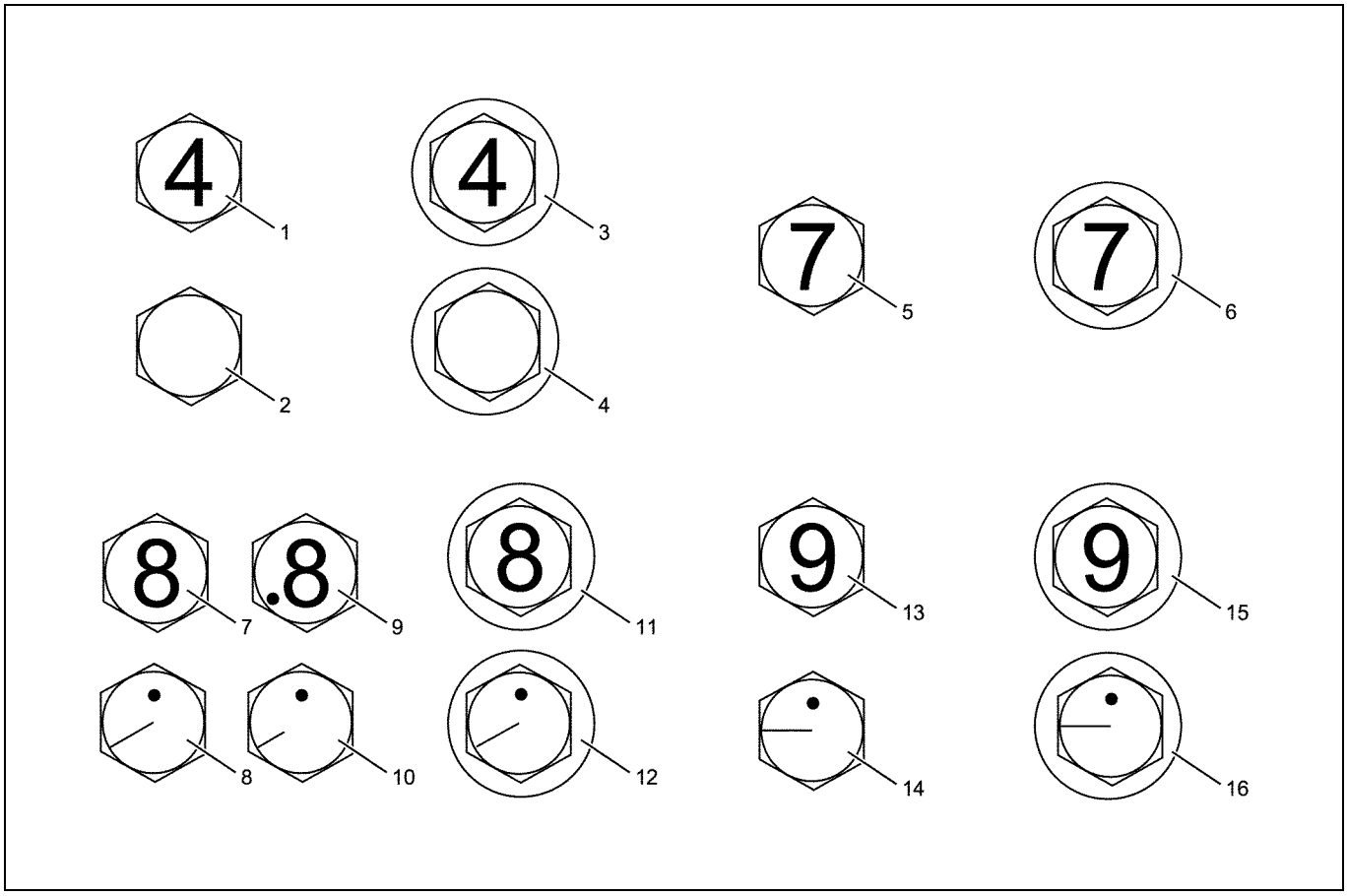
Rear Side Frame



TORQUE SPECIFICATIONS

STANDARD BOLTS

The torque values given in the following table should be applied where a particular torque is not specified.



Legend

1. Standard Hex. Head Bolt (4.8, 4T)
2. Standard Hex. Head Bolt (4.8, 4T)
3. Flange Bolt (4.8, 4T)
4. Flange Bolt (4.8, 4T)
5. Standard Hex. Head Bolt (7T)
6. Flange Bolt (7T)
7. Standard Hex. Head Bolt (Refined 8.8)
8. Standard Hex. Head Bolt (Refined 8.8)
9. Standard Hex. Head Bolt (Non-Refined 8.8)
10. Standard Hex. Head Bolt (Non-Refined 8.8)
11. Flange Bolt (8.8)
12. Flange Bolt (8.8)
13. Standard Hex. Head Bolt (9.8, 9T)
14. Standard Hex. Head Bolt (9.8, 9T)
15. Flange Bolt (9.8, 9T)
16. Flange Bolt (9.8, 9T)

N•m (kg•m/lb•ft)

Strength Class	4.8/4T		7T	
Bolt Identification	**Standard Hex. Head Bolt**	**Frange Bolt**	**Standard Hex. Head Bolt**	**Frange Bolt**
M6 × 1.0	6 (0.6/52 lb•in)	7 (0.7/61 lb•in)	7 (0.7/61 lb•in)	8 (0.8/69 lb•in)
M8 × 1.25	13 (1.3/113)	15 (1.5/11)	17 (1.7/12)	19 (1.9/14)
M10 × 1.25	27 (2.8/20)	31 (3.2/23)	37 (3.8/27)	41 (4.2/30)
M12 × 1.25	61 (6.3/45)	69 (7.0/51)	76 (7.8/56)	85 (8.7/63)
M14 × 1.5	96 (9.8/71)	104 (10.6/77)	116 (11.8/85)	126 (12.8/93)
M16 × 1.5	130 (13.3/96)	145 (14.8/127)	170 (17.3/125)	188 (19.2/139)
M18 × 1.5	188 (19.2/139)	—	244 (24.9/180)	—

N•m (kg•m/lb•ft)

Strength Class	4.8/4T		7T	
Bolt Identification	Standard Hex. Head Bolt	Frange Bolt	Standard Hex. Head Bolt	Frange Bolt
M20 × 1.5	258 (26.3/190)	—	337 (34.4/249)	—
M22 × 1.5	332 (33.9/245)	—	453 (46.3/335)	—
M24 × 2.0	449 (45.8/331)	—	570 (58.2/421)	—
* **M10 × 1.5**	26 (2.7/20)	30 (3.1/22)	36 (3.7/27)	40 (4.1/30)
* **M12 × 1.75**	57 (5.8/42)	64 (6.5/47)	71 (7.2/52)	78 (8.0/58)
* **M14 × 2.0**	89 (9.1/66)	97 (9.9/72)	110 (11.2/81)	119 (12.1/88)
* **M16 × 2.0**	124 (12.7/92)	137 (14.0/101)	162 (16.5/119)	178 (18.2/132)

N•m (kg•m/lb•ft)

Strength Class	8.8		9.8/9T	
Bolt Identification	Standard Hex. Head Bolt	Frange Bolt	Standard Hex. Head Bolt	Frange Bolt
M6 × 1.0	8 (0.8/69 lb•in)	9 (0.9/78 lb•in)	—	—
M8 × 1.25	20 (2.0/14)	22 (2.2/16)	24 (2.4/17)	26 (2.7/20)
M10 × 1.25	42 (4.3/31)	47 (4.8/35)	50 (5.1/37)	56 (5.7/41)
M12 × 1.25	87 (8.9/64)	97 (9.9/72)	95 (9.7/70)	106 (10.8/78)
M14 × 1.5	133 (13.6/98)	144 (14.6/106)	142 (14.5/105)	154 (15.7/114)
M16 × 1.5	193 (19.7/143)	214 (21.8/158)	200 (20.4/148)	221 (22.5/163)
M18 × 1.5	278 (28.3/205)	—	287 (29.3/212)	—
M20 × 1.5	385 (39.3/284)	—	396 (40.4/292)	—
M22 × 1.5	517 (52.7/381)	—	530 (54.1/391)	—
M24 × 2.0	651 (66.3/480)	—	692 (70.6/511)	—
* **M10 × 1.5**	41 (4.2/30)	46 (4.7/34)	48 (4.9/35)	54 (5.5/40)
* **M12 × 1.75**	80 (8.2/59)	89 (9.1/66)	89 (9.1/66)	99 (10.1/73)
* **M14 × 2.0**	125 (12.7/92)	135 (13.8/99.7)	133 (13.6/98)	144 (14.7/107)
* **M16 × 2.0**	185 (18.9/137)	203 (20.7/150)	191 (19.5/141)	210 (21.5/155)

The asterisk * indicates that the bolts are used for female-threaded parts that are made of soft materials such as casting, etc.

FLARE NUTS

N•m (kg•m/lb•ft)

Pipe diameter mm (in)	Torque
4.76 (0.187)	16 (1.6/12)
6.35 (0.250)	28 (2.9/21)
8.00 (0.315)	28 (2.9/21)
10.00 (0.394)	54 (5.5/40)
12.00 (0.472)	88 (9.0/65)
15.00 (0.591)	106 (10.8/78)

RECOMMENDED LIQUID GASKET

Type	Brand Name	Manufacturer	Application parts (Example)
RTV* Silicon Base	ThreeBond 1207B ThreeBond 1207C ThreeBond 1215 ThreeBond 1216 ThreeBond 1281	ThreeBond ThreeBond ThreeBond ThreeBond ThreeBond	Engine Oil Seal Retainer Engine Oil Pan Timing Gear Case Cylinder Head Cover Fuel Pump Water Pump Rear Axle etc.
Water Base	ThreeBond 1141E	ThreeBond	
Solvent	ThreeBond 1104 BelcoBond 4 BelcoBond 401 BelcoBond 402	ThreeBond Isuzu Isuzu Isuzu	
Anaerobic	LOCTITE 515 LOCTITE 518 LOCTITE 17430	LOCTITE LOCTITE LOCTITE	Engine Oil Seal Retainer Water Pump Transaxle etc.

*RTV: Room Temperature Vulcanizer

NOTE:

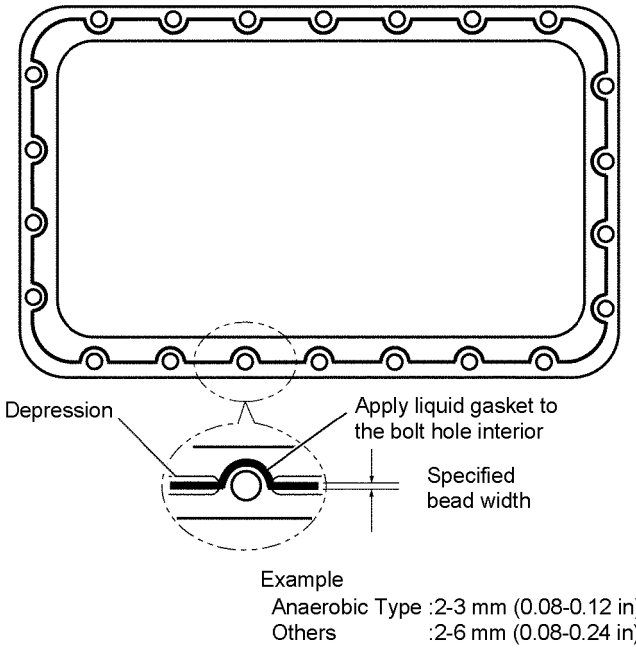
- **It is very important that the liquid gaskets listed above or their exact equivalent be used on the vehicle.**
- **LOCTITE 515 and LOCTITE 518 harden upon contact with a metal surface.**
  Do not apply LOCTITE 515 or LOCTITE 518 between two metal surfaces having a clearance of greater than 0.25 mm (0.001 in). Poor adhesion will result.
- **Be careful to use the specified amount of liquid gasket.**
  Follow the manufacturer's instructions at all times.

APPLICATION PROCEDURE

1. Completely remove lubricant and moisture from the connecting surfaces.
   The surfaces must be perfectly dry.
2. Apply specified bead width of liquid gasket to one of the connecting surfaces.
   There must be no gaps in the bead.

mm (in)

SCREW HOLE	DEPRESSION	JUDGE MENT
1-3 (0.04-0.12)		OK
1-3 (0.04-0.12)	More than 2 (0.08)	OK
		NG


Depression
Apply liquid gasket to the bolt hole interior
Specified bead width
Example
Anaerobic Type :2-3 mm (0.08-0.12 in)
Others :2-6 mm (0.08-0.24 in)

MFW70AMF000101

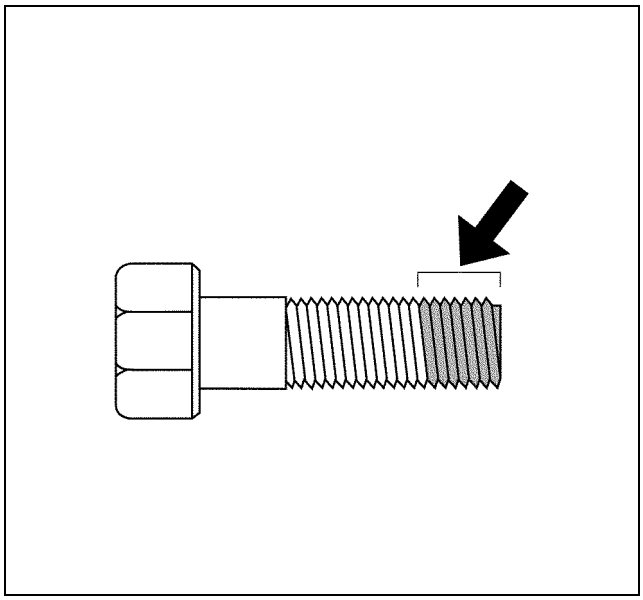
NOTE:
When the application procedures are specified in this Workshop manual, follow them.

RECOMMENDED THREAD LOCKING AGENT

Type	Color
LOCTITE 242	Blue
LOCTITE 262	Red
LOCTITE 271	Red

Application Steps

1. Completely remove all lubricant and moisture from the bolts and the female threaded surfaces of the parts to be joined.
   The surfaces must be perfectly dry.
2. Apply LOCTITE to the bolts.
   Apply LOCTITE to at least 1/3 of the bolt's threaded are area.



3. Tighten the bolts to the specified torque.

NOTE:
When the application procedures are specified in this Workshop manual, follow them.

GENERAL INFORMATION

MAINTENANCE AND LUBRICATION

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MAINTENANCE SCHEDULE

When performing the checks on the following items, regular inspection items should also be checked.

Abbreviations Used in This Manual

I: Inspect, clean and correct or replace as necessary
A: Adjust
R: Replace
T: Tighten to specified torque
L: Lubricate

OPT	Optional equipment.
AHB	For air-over hydraulic brake model only.
FAB	For full air brake model only.

* Mark = Under severe driving conditions, more frequent maintenance is required. Refer to “Maintenance Schedule Under Severe Driving Conditions”.

MAINTENANCE SCHEDULE (NO. 1)

I: Inspect, clean and correct or replace as necessary **A:** Adjust
R: Replace **T:** Retighten to specified torque **L:** Lubricate

Use odometer reading or period, whichever comes first.

SERVICE INTERVAL:	Initial	Every					
x 1,000 km	**1**	**4**	**8**	**12**	**16**	**24**	**48**
(x 1,000 miles)	(0.6)	(2.5)	(5.0)	(7.5)	(10.0)	(15.0)	(30.0)
or months	-	1	2	3	4	6	12
ENGINE							
Engine starting and abnormal noise	-	**I**	-	-	-	-	-
Idling speed and acceleration	-	**I**	-	-	-	-	-
* Air cleaner element	**(After 6 times of repeated cleaning: R) or**						**R**
Inlet and exhaust manifold	**T**	-	-	-	-	-	**T**
Valve clearances	**A**	-	-	-	-	-	**A**
Compression pressure in each cylinder	-	-	-	-	-	-	**I**
Oil contamination	-	**I**	-	-	-	-	-
* Engine oil	**R**	**(Every 4,000 km or every month: I)** **(Every 20,000 km or 5 months: R)**					
* Main and partial oil filter (combined type)	-	**(Every 20,000 km or 5 months: R)**					
Fuel filter element	-	-	-	-	-	**R**	-
Fuel tank strainer	-	-	**I**	-	-	-	-
Fuel tank inside	-	-	-	-	-	-	**I**
Nozzle injection pressure and spraying condition	-	-	-	-	-	**I**	-
Injection timing	-	-	-	-	-	**I**	-
Feed pump strainer	-	-	-	-	-	**I**	-
Function of air compressor, governor and unloader valve	-	-	-	-	-	-	**I**
Function of radiator tank cap	-	**I**	-	-	-	-	-
Fan belt for damage	**I**	**I**	-	-	-	-	-
* Exhaust pipes looseness and mounting	-	**I**	-	-	-	-	-
Cooling system and radiator	-	**(Every 2 years: I)**					
Radiator coolant	-	**(Every 2 years: R)** **Equal volume (50 : 50) of LLC (specified product of Isuzu) and clean tap water.**					
TURBOCHARGER							
Air duct connections and gaskets	-	**I**	-	-	-	-	-
CLUTCH							
Clutch fluid	-	**I**	-	-	-	-	**R**
Function of clutch system	-	**I**	-	-	-	-	-
Clutch pedal free play and pedal stroke	-	**I**	-	-	-	-	-
Clutch booster exhaust cover	-	**I**	-	-	-	-	-
TRANSMISSION							
* Transmission gear oil (for ISUZU)	**R**	**I**	-	-	-	-	**R**
Transmission gear oil (for ZF)	**Refer to ZF transmission service manual**						
Looseness in gear control mechanism	-	-	**I**	-	-	-	**I**

MAINTENANCE SCHEDULE (NO. 2)

I: Inspect, clean and correct or replace as necessary **A:** Adjust
R: Replace **T:** Retighten to specified torque **L:** Lubricate

Use odometer reading or period, whichever comes first.

SERVICE INTERVAL:	**Initial**	**Every**					
x 1,000 km	**1**	**4**	**8**	**12**	**16**	**24**	**48**
(x 1,000 miles)	(0.6)	(2.5)	(5.0)	(7.5)	(10.0)	(15.0)	(30.0)
or months	-	1	2	3	4	6	12
PROPELLER SHAFT							
Loose connections	-	-	-	-	-	I	-
* Universal joint and splines for wear	-	-	-	-	-	-	I
Looseness in bearings and related parts	-	-	-	-	-	-	I
REAR AXLE							
* Differential gear oil	R	I	-	-	-	-	R
* Differential gear and rear wheel hub bearing oil	R	I	-	-	-	-	R
Rear wheel hub bearing grease	-	-	-	-	-	-	R
Axle case for damage and distortion	-	-	-	-	-	-	I
FRONT AXLE							
Front wheel hub bearing grease	-	-	-	-	-	-	R
Damage and distortion	-	-	-	-	-	-	I
SUSPENSION							
* Leaf spring U-bolt nuts	T	-	-	-	-	-	T
Spring for damage	-	I	-	-	-	-	-
Unbalance spring action of leaf springs due to weakening	-	-	-	-	-	-	I
Mount for looseness and damage	-	-	-	I	-	-	-
Spring leaves for misalignment	-	-	-	-	-	-	I
Shock absorbers for leaks and damage	-	-	-	I	-	-	-
Shock absorbers for looseness in mount	-	-	-	I	-	-	-
WHEELS							
Presence of foreign matter	-	I	-	-	-	-	-
Wheel nuts as necessary	T(★)	T	-	-	-	-	-
Disc wheel for damage	-	I	-	-	-	-	-
Front wheel hub bearings for looseness	-	-	-	-	-	I	-
Rear wheel hub bearings for looseness	-	-	-	-	-	I	-
STEERING							
Power steering fluid	-	I	-	-	-	-	R
Power steering fluid tank strainer	-	-	-	-	-	-	I
Looseness in mount	-	-	-	I	-	-	-
Bearings for excessive play	-	-	-	-	-	-	I
*Steering linkage for damage, looseness and excessive play	I	-	-	I	-	-	-
Clearance between knuckle and front axle	-	-	-	-	-	-	I
Wheel alignment	-	-	-	-	-	-	I
Right and left turning circle	-	-	-	-	-	-	I
Clearance between kingpins and bearings	-	-	-	-	-	-	I

★ ISO 10 stud: Initial 50 – 100 km (30-60 miles)

MAINTENANCE SCHEDULE (NO. 3)

I: Inspect, clean and correct or replace as necessary **A:** Adjust
R: Replace **T:** Retighten to specified torque **L:** Lubricate

Use odometer reading or period, whichever comes first.

SERVICE INTERVAL:	Initial	Every					
x 1,000 km	**1**	**4**	**8**	**12**	**16**	**24**	**48**
(x 1,000 miles)	(0.6)	(2.5)	(5.0)	(7.5)	(10.0)	(15.0)	(30.0)
or months	-	1	2	3	4	6	12
SERVICE BRAKE							
AHB Brake fluid	-	I	-	-	-	-	R
*Lining for wear	-	-	-	I	-	-	-
*Brake drum for wear and damage	-	-	-	-	-	-	I
AHB Brake hoses	-	I	-	-	-	-	R
AHB Function of brake valve	-	-	-	-	-	-	I
AHB Air booster exhaust cover	-	I	-	-	-	-	-
Hoses and pipes for leakage, damage and loose connections	-	I	-	-	-	-	-
FAB Cams and wheel brakes for excessive wear	-	-	-	-	-	-	I
FAB Brake chamber rod stroke	-	I	-	-	-	-	-
V HSA valve	-	-	-	-	-	-	I
FAB Function of brake chamber	-	-	-	-	-	-	I
FAB Function of brake valve and relay valve	-	-	-	-	-	-	I
Air dryer	-	-	-	-	I	-	-
Air dryer	-	**(Change the desiccant at 100,000 km or every year)**					
PARKING BRAKE							
Lining for wear	-	-	-	-	-	-	I
Brake drum for wear and damage	-	-	-	-	-	-	I
Looseness in mount	-	-	-	I	-	-	-
Rod and cable for damage and loose connection	-	I	-	-	-	-	-
FAB Function of control valve system	-	I	-	-	-	-	-
FAB Function of spring chamber	-	-	-	-	-	-	I
FAB Brake spring chamber rod stroke	-	I	-	-	-	-	-
ELECTRICAL EQUIPMENT							
Specific gravity of electrolyte	-	-	-	I	-	-	-
Function of starter motor	-	-	-	I	-	-	-
Starter motor brushes for wear	-	-	-	-	-	-	I
Function of generator	-	I	-	-	-	-	-
Terminals of wiring harness for damage and loose connections	-	I	-	-	-	-	-
DPD							
Check exhaust pressure or clean filter	-	**(Every 100,000 km or 12 months: I)**					
Pressure difference sensor rubber	-	**(Every 40,000 km or 12 months: R)**					

MAINTENANCE SCHEDULE FOR LUBRICATIONS

L: Lubricate

Use odometer reading or period, whichever comes first.

SERVICE INTERVAL:	**Initial**	**Every**					
x 1,000 km	**1**	**4**	**8**	**12**	**16**	**24**	**48**
(x 1,000 miles)	(0.6)	(2.5)	(5.0)	(7.5)	(10.0)	(15.0)	(30.0)
or months	-	1	2	3	4	6	12
GREASING POINTS							
Engine water pump bearing	-	**L**	-	-	-	-	-
Front spring pin	-	**L**	-	-	-	-	-
Front shackle pin	-	**L**	-	-	-	-	-
King pin	-	**L**	-	-	-	-	-
Drag link (Except maintenance free type)	-	**L**	-	-	-	-	-
Clutch shift block	-	**L**	-	-	-	-	-
Propeller shaft universal joints and sliding sleeve	-	**L**	-	-	-	-	-
Propeller shaft center bearing	-	**L**	-	-	-	-	-
Rear spring pin	-	**L**	-	-	-	-	-
Rear shackle pin or rear sliding pad	-	**L**	-	-	-	-	-
FAB Front wheel brake camshaft and slack adjuster	-	**L**	-	-	-	-	-
FAB Forward rear wheel brake camshaft and slack adjuster	-	**L**	-	-	-	-	-
Steering shaft universal joints and sliding sleeve	-	**L**	-	-	-	-	-

MAINTENANCE SCHEDULE UNDER SEVERE DRIVING CONDITIONS

Severe driving conditions
A: Repeated short trips
B: Driving on rough roads
C: Driving on dusty roads
D: Driving in extremely cold weather and/or salted roads

Item	Interval	Condition				
		A	B	C	D	A+D
Air cleaner element	Replace every 24,000 km (15,000 miles) (or after 6 times of repeated cleaning)			●		
Engine oil	Change every 10,000 km (6,000 miles)			●		●
Main and partial oil filter (combined type)	Replace every 10,000 km (6,000 miles)			●		●
Main and partial oil filter (separate type)	Replace every 6,000 km (3,750 miles)			●		●
Exhaust pipes and mounting	Inspect every 2,000 km (1,250 miles)	●	●		●	
Transmission gear oil	Change every 24,000 km (15,000 miles)		●			
Universal joints and splines for wear	Inspect every 24,000 km (15,000 miles)		●			
Differential gear oil	Change every 24,000 km (15,000 miles)		●			
Differential gear and rear wheel hub bearing oil Inter differential gear oil	Change every 24,000 km (15,000 miles)		●			
Front wheel hub bearing oil	Change every 24,000 km (15,000 miles)		●			
Leaf spring U-bolt nuts	Retighten every 24,000 km (15,000 miles)		●			
Steering linkage for damage, looseness and excessive play	Inspect every 6,000 km (3,750 miles)		●			
Brake lining for wear	Inspect every 6,000 km (3,750 miles)	●	●	●		
Brake drum for wear and damage	Inspect every 24,000 km (15,000 miles)	●	●	●		

RECOMMENDED FLUIDS, LUBRICANTS AND DIESEL FUELS

In order to obtain the maximum performance and the longest service life from your ISUZU vehicles, it is very important to select and use correctly best lubricant and diesel fuels.
When lubricating, be sure to use ISUZU genuine lubricants or recommended lubricants listed below, according to the maintenance schedule for each vehicle model.

The lubrication intervals in the maintenance schedule and the coverage and period of new vehicle warranty are based on the use of ISUZU genuine lubricants or recommended lubricants as given in the chart which will serve as a guide for selecting lubricants of proper brand name.

LUBRICATION	MAKE	BRAND / TYPE	GRADE		
			API	ACEA	JASO
Diesel engine crankcase with DPD (Low ash oil)	**ISUZU GENUINE**	**BESCO MULTI-Z TYPE CF - 4 (10W-30)**			**DH-2**
	ISUZU GENUINE	**BESCO CLEAN SUPER (10W-40)**			**DH-2**
	ISUZU GENUINE	**BESCO CLEAN (10W-30, 40)**			**DH-2**
	SHELL	Signia (10W-40)		E6	
	Mobil	Delvac XHPLE (10W-40)		E6	
	TEXACO	Ulsa Ultra (10W-40)		E6	
	TEXACO	Havoline Ultra S (5W-40)		C3	
Manual transmission (Except FULLER and ZF) Transfer case Differential Oil lubricated hub bearing	**ISUZU GENUINE**	**BESCO GEAR OIL SH (80W-90), (90), (140)**	**GL-5**		
	CALTEX	THUBAN GL-5 EP (80W-90), (85W-140)	GL-5		
	SHELL	SPIRAX A (140)	GL-5		
	ELF	TRANSELF TYPE B (80W-90), (85W-140)	GL-5		
	TOTAL	TRANSMISSION TM (80W-90), (85W-140)	GL-5		
	CASTROL	EPX 90 (90)	GL-5		
	CASTROL	DYNADRIVE (80W-90)	GL-5		
	BP	ENERGEAR HYPO (90)	GL-5		
	BP	ENERGEAR EP (80W-90)	GL-5		
	ExxonMobil	Mobilube HD (80W-90)	GL-5		
	ExxonMobil	Esso Gear Oil GX (80W-90)	GL-5		
Automatic transmission	**ISUZU GENUINE**	**BESCO ATF Ⅱ (power steering only), ATF Ⅲ**			
	CALTEX/TEXACO	TEXAMATIC 1888 (DEXRON® Ⅲ)			
	SHELL	DONAX TG (DEXRON® Ⅲ)			
	ELF	ELFMATIC G3 (DEXRON® Ⅲ)			
	TOTAL	TOTAL FLUID AT 42 (DEXRON® Ⅲ)			
	CASTROL	TQ DEXRON Ⅲ (DEXRON® Ⅲ)			
	BP	AUTORAN DX3 (DEXRON® Ⅲ)			

LUBRICATION	MAKE	BRAND / TYPE	GRADE		
			API	ACEA	JASO
Center bearing Clutch shift block Grease lubricated hub Water pump Propeller shaft sliding yoke Universal joint (Multi purpose grease)	**ISUZU GENUINE** CALTEX/TEXACO SHELL TOTAL CASTROL BP	**BESCO L-2 GREASE (No.2), L-3 GREASE (No.3)** STARPLEX-2 (No.2) RETINAX LX2 (No.2) MULTIS EP2/EP3 (No.2), (No.3) LM GREASE (No.2), (No.3) ENERGEASE LS (No.2), (No.3)			

NOTE:

*** For the vehicle equipped with DPD, ISUZU recommends engine oil that supports DPD (Low ash oil).**
The oil specified in the bottom row "Diesel engine crankcase" can be also used for the vehicle equipped with DPD.
Use of low ash oil, however, lengthens the maintenance interval of the DPD filter.

LUBRICATION	MAKE	BRAND
Engine cooling system	**ISUZU GENUINE** TEXACO TEXACO CALTEX CALTEX	**BESCO LLC SUPER TYPE E, AS** HAVOLINE EXTENDED LIFE ANTIFREEZE COOLANT HAVOLINE XLC CALTEX EXTENDED LIFE COOLANT CALTEX XLC

NOTE:

Equal volume (50:50) of LLC (Specified product of Isuzu) and clean tap water.

FLUID	MAKE	BRAND NAME	GRADE *
Clutch and brake fluid reservoir	ISUZU GENUINE AC Delco ™	Besco brake fluid super Delco supreme 11	DOT 3 DOT 3

* FMVSS 116

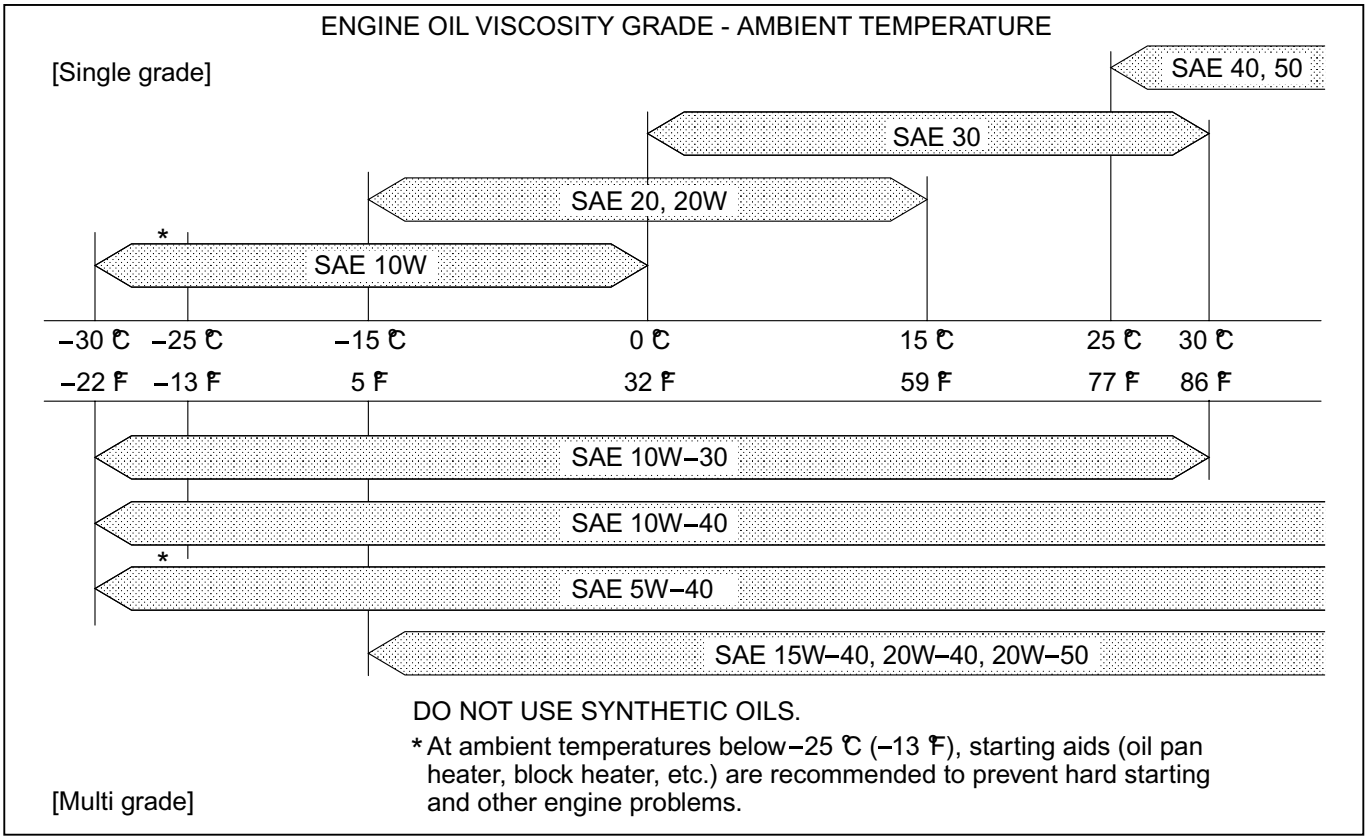
DIESEL FUEL / APPLICABLE STANDARD (Sulfur content below 50ppm)	
JIS (JAPANESE INDUSTRIAL STANDARD)	Based on K2204 Diesel Fuel
DIN (DEUTSCHE INDUSTRIE NORMEN)	Based on EN590: 2004
ASTM(AMERICAN SOCIETY FOR TESTING and MATERIALS)	Based on D975-04c NO.1-D S15 or NO.2-D S15 (below 15 ppm)
BS (BRITISH STANDARD)	Based on EN590: 2004

NOTE:

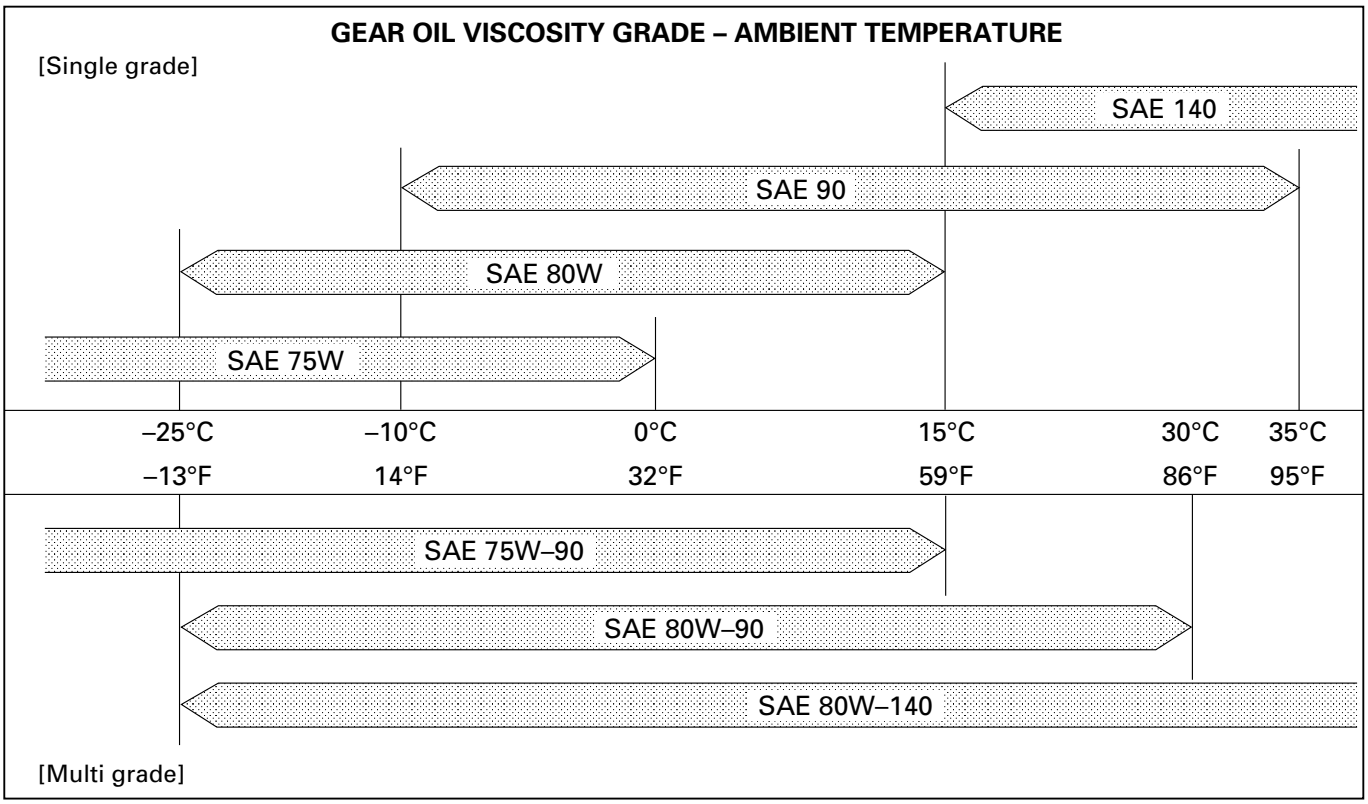
Do not use fuels other than those listed above.
Doing so may adversely affect the engine.

OIL VISCOSITY CHART

ENGINE OIL


ENGINE OIL VISCOSITY GRADE - AMBIENT TEMPERATURE
[Single grade]
SAE 40, 50
SAE 30
SAE 20, 20W
*
SAE 10W
–30 ℃ –25 ℃ –15 ℃ 0 ℃ 15 ℃ 25 ℃ 30 ℃
–22 ℉ –13 ℉ 5 ℉ 32 ℉ 59 ℉ 77 ℉ 86 ℉
SAE 10W–30
SAE 10W–40
*
SAE 5W–40
SAE 15W–40, 20W–40, 20W–50
DO NOT USE SYNTHETIC OILS.
* At ambient temperatures below –25 ℃ (–13 ℉), starting aids (oil pan heater, block heater, etc.) are recommended to prevent hard starting and other engine problems.
[Multi grade]

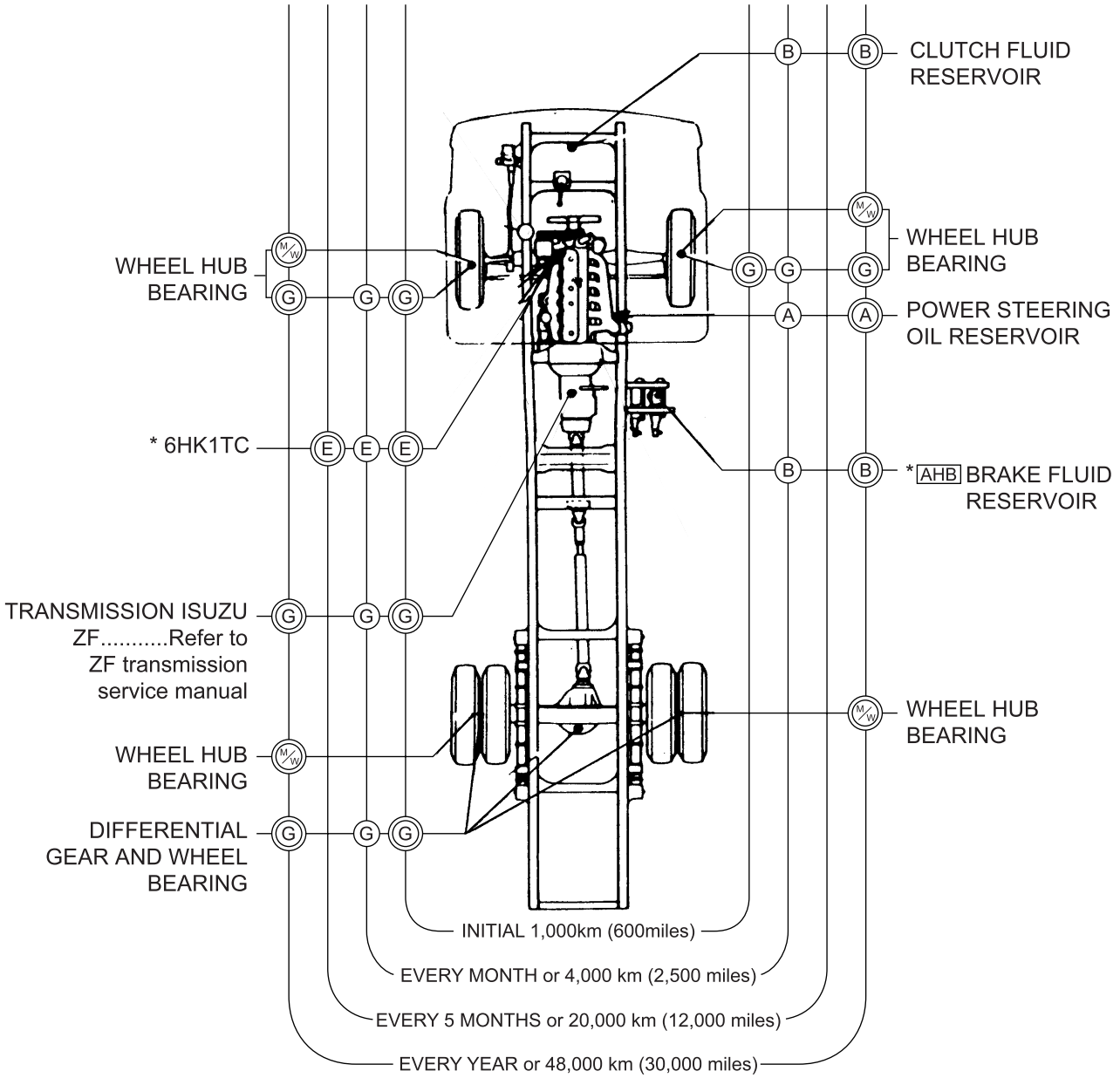
GEAR OIL



LUBRICATION CHART

FRR, FSR, FTR, FVR models

◯ CHECK or SUPPLY
◎ CHANGE
Ⓔ ENGINE OIL
Ⓖ GEAR OIL
Ⓜ MULTIPURPOSE TYPE GREASE
Ⓜ/W MULTIPURPOSE TYPE or WHEEL HUB BEARING GREASE
Ⓑ BRAKE FLUID
Ⓐ AUTOMATIC TRANSMISSION FLUID
Ⓒ CAB TILT PUMP OIL

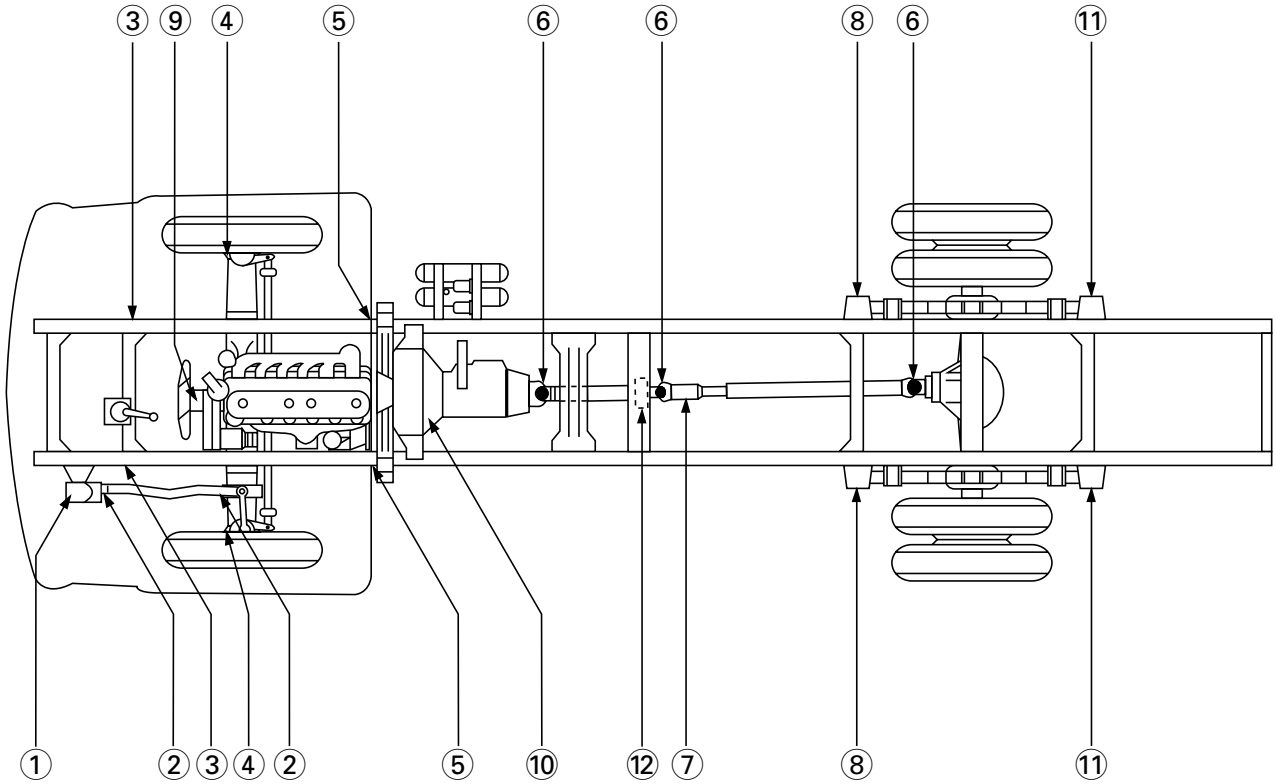

CLUTCH FLUID RESERVOIR
WHEEL HUB BEARING
POWER STEERING OIL RESERVOIR
WHEEL HUB BEARING
* 6HK1TC
*AHB BRAKE FLUID RESERVOIR
TRANSMISSION ISUZU
ZF.....Refer to ZF transmission service manual
WHEEL HUB BEARING
WHEEL HUB BEARING
DIFFERENTIAL GEAR AND WHEEL BEARING
INITIAL 1,000km (600miles)
EVERY MONTH or 4,000 km (2,500 miles)
EVERY 5 MONTHS or 20,000 km (12,000 miles)
EVERY YEAR or 48,000 km (30,000 miles)

**** Items with an asterisk, check oil and fluid level daily.***

GREASING POINTS

FRR, FSR, FTR, FVR models

Every 4,000 km (2,500 miles) or every month



① Steering shaft universal joints and sliding sleeve
② Drag link (except maintenance free type)
③ Front spring pin
④ Kingpin
⑤ Front shackle pin
⑥ Propeller shaft universal joint
⑦ Propeller shaft sliding yoke
⑧ Rear spring pin
⑨ Water pump
⑩ Clutch shift block
⑪ Rear shackle pin or sliding pad
⑫ Propeller shaft center bearing

MGGEN-WE-0761

You are requested to order this manual using the manual number that is shown above.

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